What is claimed is:

1. A method for driving a plasma display panel wherein discharge cells are formed corresponding to pixels at respective intersections between a plurality of row electrodes disposed in an array for respective scan lines and a plurality of column electrodes disposed in an array crossing said row electrodes, comprising the steps of:

executing, in each of N (N being a natural number) sub-fields forming a display period of one field, a pixel data writing step for setting said discharge cells to either one of non-light-emitting cells or light-emitting cells in response to pixel data, and a light-emission sustaining step for allowing only said light-emitting cells to emit light during a light-emission period corresponding to each of weights assigned to said sub-fields respectively, wherein said light-emission period in said light-emission sustaining step of each of said sub-fields is changed field by field or frame by frame.

2. The method for driving a plasma display panel according to Claim 1, wherein said light-emission period in said light-emission sustaining step of each of said sub-fields is changed between respective lines of said plasma display panel.

3. The method for driving a plasma display panel according to Claim 1, further comprising the steps of:

executing a reset process for resetting all said discharge cells to either one state of light-emitting cells

or non-light-emitting cells only in the head portion of said sub-fields during said display period of one field, and

setting said discharge cells to either non-light-emitting cells or light-emitting cells in response to pixel data only in said pixel data writing step of any one of said sub-fields.

4. The method for driving a plasma display panel according to Claim 3, further comprising the steps of:

resetting said all discharge cells to the state of said light-emitting cells in said reset process, and

setting said discharge cells to said non-light-emitting cells by erase-discharging said discharge cells selectively in response to said pixel data in said pixel data writing step.

5. The method for driving a plasma display panel according to Claim 4, wherein, only in said light-emission sustaining step of said n (n=0 to N) respective sub-fields successive from the head of said display period of one field,

said light-emitting cells are allowed for emitting light to perform a drive of N+1 levels of halftone.

6. The method for driving a plasma display panel according to Claim 5, wherein, among said respective sub-fields disposed in said one field, the number of sub-fields responsible for low-brightness light-emission is greater than the number of sub-fields responsible for high-brightness light-emission.

7. The method for driving a plasma display panel according

to Claim 3, further comprising the steps of:

resetting said all discharge cells to the state of said light-emitting cells in said reset process, and

setting said discharge cells to said light-emitting cells by write-discharging said discharge cells selectively in response to said pixel data in said pixel data writing step.

8. The method for driving a plasma display panel according to Claim 7, wherein, only in said light-emission sustaining step of said n (n=0 to N) respective sub-fields successive from the last of said display period of one field,

said light-emitting cells are allowed for emitting light to perform drive of N+1 levels of halftone.

9. The method for driving a plasma display panel according to Claim 8, wherein, among said respective sub-fields disposed in said one field, the number of sub-fields responsible for low-brightness light-emission is greater than the number of sub-fields responsible for high-brightness light-emission.

10. The method for driving a plasma display panel according to Claim 1, further comprising the steps of:

executing a reset process for resetting all said discharge cells to either one state of light-emitting cells or non-light-emitting cells only in the head portion of said sub-fields during said display period of one field, and

applying to said column electrodes a first pixel data pulse which generates a discharge for setting said discharge cells to said non-light-emitting cells or said light-emitting

cells in said pixel data writing step of any one of the sub-fields of said sub-fields, and, in said pixel data writing step of said sub-field present immediately thereafter, applying to said column electrodes a second pixel data pulse which is the same as said pixel data pulse.

11. The method for driving a plasma display panel according to Claim 1, further comprising the step of:

erase processes for changing all discharge cells to non-light-emitting cells only in said last sub-field during said display period of one field.

12. The method for driving a plasma display panel according to Claim 1, wherein, only in said light-emission sustaining step of said n (n=0 to N) respective sub-fields successive from the head of said display period of one field,

said light-emitting cells are allowed for emitting light to perform a drive of N+1 levels of halftone.

13. The method for driving a plasma display panel according to Claim 1, wherein, only in said light-emission sustaining step of said n (n=0 to N) respective sub-fields successive from the last of said display period of one field,

said light-emitting cells are allowed for emitting light to perform drive of N+1 levels of halftone.

14. The method for driving a plasma display panel according to Claim 1, wherein the ratio of said light-emission periods of said light-emission sustaining step of said respective sub-fields is set non-linearly, thereby compensating for the non-linear display characteristics of input pixel data.

15. The method for driving a plasma display panel according to Claim 14, wherein said non-linear display characteristics are the Gamma characteristics.

16. The method for driving a plasma display panel according to Claim 1, wherein multi-level gray-scale processing is applied to said input pixel data.

17. The method for driving a plasma display panel according to Claim 16, wherein said multi-level gray-scale processing is an error diffusion processing and/or dither processing.

18. The method for driving a plasma display panel according to Claim 16, wherein said input pixel data is converted to be separated, at a bit boundary, to an upper bit group and a lower bit group required for said multi-level gray-scale processing before said multi-level gray-scale processing is carried out.

19. The method for driving a plasma display panel according to Claim 1, wherein the start-up timing of light-emission drive in said one field differs in a field having said different light-emission period in said light-emission sustaining step of respective said sub-fields.

20. The method for driving a plasma display panel according to Claim 1, wherein the length of time of said pixel data writing step of said sub-field differs in a field having said different light-emission period in said light-emission sustaining step of respective said sub-fields.

21. A method for driving a plasma display panel wherein discharge cells are formed corresponding to pixels at

respective intersections between a plurality of row electrodes disposed in an array for respective scan lines and a plurality of column electrodes disposed in an array crossing said row electrodes, comprising the steps of:

dividing a display period of one field into N sub-fields,

in said respective N sub-fields, executing a pixel data writing step for setting said discharge cells to either one of non-light-emitting cells or light-emitting cells in response to pixel data, and a light-emission sustaining step for allowing only said light-emitting cells to emit light only during a light-emission period corresponding to weights assigned to said respective sub-fields, and

changing said light-emission period in said light-emission sustaining step of said respective sub-fields line by line in said plasma display panel.

22. A method for driving a plasma display panel wherein discharge cells are formed corresponding to pixels at respective intersections between a plurality of row electrodes disposed in an array for respective scan lines and a plurality of column electrodes disposed in an array crossing said row electrodes, having a light-emission drive sequence comprising the steps of:

executing pixel data writing step for setting, in each of N (N being a natural number) divided display periods constituting a unit display period, said discharge cells to either one of non-light-emitting cells or light-emitting cells in response to N-bit display drive pixel data obtained

by applying the multi-level gray-scale processing to input video signal in each of said divided display periods, and executing a light-emission sustaining step for allowing only said light-emitting cells to emit light by the number of times corresponding to each of weights assigned to said divided display periods respectively,

wherein said light-emission drive sequence comprises a first drive pattern to be carried out by alternating, at intervals of said respective unit display period, first and second light-emission drive sequences which have ratios of the number of times of light-emission different from each other in said light-emission sustaining period of said respective N divided display periods, and a second drive pattern to be carried out by alternating, at intervals of said respective unit display period, third and fourth light-emission drive sequences which have ratios of the number of times of light-emission different from each other in said light-emission sustaining period of said respective N divided display periods, and

said first drive pattern and said second drive pattern are selectively executed in accordance with the type of said input video signal.

23. The method for driving a plasma display panel according to Claim 22, wherein said input video signal is a video signal for a personal computer or a TV signal.

24. The method for driving a plasma display panel according to Claim 22, wherein said unit display period is one field or

one frame display period of said input video signal.

25. The method for driving a plasma display panel according to Claim 22, wherein the brightness level of respective gray-scale brightness points that are obtained by carrying out said first light-emission drive sequence coincides with the brightness level of respective gray-scale brightness points obtained by said multi-level gray-scale processing when said second light-emission drive sequence is carried out, whereas the brightness level of respective gray-scale brightness points that are obtained by carrying out said third light-emission drive sequence differs from the brightness level of respective gray-scale brightness points obtained by said multi-level gray-scale processing when said fourth light-emission drive sequence is carried out.

26. The method for driving a plasma display panel according to Claim 22, wherein said ratio of the number of times of light-emission of said light-emission sustaining step of said respective divided display periods is set non-linearly, thereby compensating for the non-linear display characteristics of said input video signal.

27. The method for driving a plasma display panel according to Claim 26, wherein said non-linear display characteristics are the Gamma characteristics.

28. The method for driving a plasma display panel according to Claim 26, wherein said multi-level gray-scale processing is carried out before said non-linear display characteristics of said input video signal are compensated for.

29. The method for driving a plasma display panel according to Claim 22, wherein said multi-level gray-scale processing comprises an error diffusion processing and/or dither processing, and changes dither coefficients of said dither processing at each of said unit display period.

30. The method for driving a plasma display panel according to Claim 22, wherein pixel data corresponding to said input video signal is separated, at a bit boundary, to an upper bit group and a lower bit group required for said multi-level gray-scale processing before said multi-level gray-scale processing is carried out.

31. The method for driving a plasma display panel according to Claim 22, further comprising the steps of:

executing a reset process for resetting all said discharge cells to either one state of light-emitting cells or non-light-emitting cells only in the head portion of said divided display periods during said unit display period, and

setting said discharge cells to either non-light-emitting cells or light-emitting cells in response to said display drive pixel data only in said pixel data writing step of any one of said divided display periods.

32. The method for driving a plasma display panel according to Claim 31, wherein an erase process is provided in which all said discharge cells are changed from the state of non-light-emitting cells to light-emitting cells only in the last period of said divided display periods during said unit display period.

33. The method for driving a plasma display panel according to any one of Claim 31, further comprising the steps of:

resetting said all discharge cells to the state of said light-emitting cells in said reset process, and

setting said discharge cells to said non-light-emitting cells by erase-discharging said discharge cells selectively in response to said display drive pixel data in said pixel data writing step.

34. The method for driving a plasma display panel according to Claim 33, wherein, only in said light-emission sustaining step of respective n (n=0 to N) periods of said divided display periods successive from the head of said unit display period,

said light-emitting cells are allowed for emitting light to perform drive of N+1 levels of halftone.

35. The method for driving a plasma display panel according to Claim 34, wherein, among said respective divided display periods disposed in said unit display period, the number of divided display periods responsible for low-brightness light-emission is greater than the number of divided display periods responsible for high-brightness light-emission.

36. The method for driving a plasma display panel according to any one of Claim 31, further comprising the steps of:

resetting said all discharge cells to the state of said non-light-emitting cells in said reset process, and

setting said discharge cells to said light-emitting cells by write-discharging said discharge cells selectively in

response to said display drive pixel data in said pixel data writing step.

37. The method for driving a plasma display panel according to Claim 36, wherein, only in said light-emission sustaining step of respective n (n=0 to N) periods of said divided display periods successive from the last of said unit display period,

said light-emitting cells are allowed for emitting light to perform a drive of N+1 levels of halftone.

38. The method for driving a plasma display panel according to Claim 37, wherein, among said respective divided display periods disposed in said unit display period, the number of divided display periods responsible for low-brightness light-emission is greater than the number of divided display periods responsible for high-brightness light-emission.

39. The method for driving a plasma display panel according to Claim 22, further comprising the steps of:

executing reset process for resetting all said discharge cells to either one state of light-emitting cells or non-light-emitting cells only in the head portion of said divided display periods during said unit display period,

applying, to said column electrodes, a first pixel data pulse for a generating discharge for setting said discharge cells to either non-light-emitting cells or light-emitting cells in response to said display drive pixel data in said pixel data writing step of any one of said divided display periods, and

applying, to said column electrodes, a second pixel data pulse which is the same as said first pixel data pulse in said pixel data writing step of any one of said divided display periods which is present immediately thereafter.

40. The method for driving a plasma display panel according to any one of Claim 22, further comprising the steps of:

resetting said all discharge cells to the state of said light-emitting cells in said reset process, and

setting said discharge cells to said non-light-emitting cells by erase-discharging said discharge cells selectively in response to said display drive pixel data in said pixel data writing step.

41. The method for driving a plasma display panel according to Claim 40, wherein, only in said light-emission sustaining step of respective n (n=0 to N) periods of said divided display periods successive from the head of said unit display period,

said light-emitting cells are allowed for emitting light to perform drive of N+1 levels of halftone.

42. The method for driving a plasma display panel according to Claim 41, wherein, among said respective divided display periods disposed in said unit display period, the number of divided display periods responsible for low-brightness light-emission is greater than the number of divided display periods responsible for high-brightness light-emission.

43. The method for driving a plasma display panel according to any one of Claim 22, further comprising the steps of:

resetting said all discharge cells to the state of said non-light-emitting cells in said reset process, and

setting said discharge cells to said light-emitting cells by write-discharging said discharge cells selectively in response to said display drive pixel data in said pixel data writing step.

44. The method for driving a plasma display panel according to Claim 43, wherein, only in said light-emission sustaining step of respective n (n=0 to N) periods of said divided display periods successive from the last of said unit display period,

said light-emitting cells are allowed for emitting light to perform a drive of N+1 levels of halftone.

45. The method for driving a plasma display panel according to Claim 44, wherein, among said respective divided display periods disposed in said unit display period, the number of divided display periods responsible for low-brightness light-emission is greater than the number of divided display periods responsible for high-brightness light-emission.

46. A method for driving a plasma display panel wherein discharge cells are formed corresponding to pixels at respective intersections between a plurality of row electrodes disposed in an array for respective scan lines and a plurality of column electrodes disposed in an array crossing said row electrodes, having a light-emission drive sequence comprising the steps of:

executing pixel data writing step for setting, in each of

N (N being a natural number) divided display periods constituting a unit display period, said discharge cells to either one of non-light-emitting cells or light-emitting cells in response to N-bit display drive pixel data obtained by applying the multi-level gray-scale processing to input video signal in said respective divided display periods, and executing a light-emission sustaining step for allowing only said light-emitting cells to emit light only by the number of times corresponding to weights assigned to said respective divided display periods,

wherein said light-emission drive sequence comprises first and second light-emission drive sequences which have ratios of the number of times of light-emission different from each other in said light-emission sustaining period of each of said N divided display periods, and

the brightness level of respective gray-scale brightness points that are obtained by carrying out said first light-emission drive sequence coincides with the brightness level of respective gray-scale brightness points obtained by said multi-level gray-scale processing when said second light-emission drive sequence is carried out.

47. The method for driving a plasma display panel according to Claim 46, wherein said input video signal is a TV signal.

48. The method for driving a plasma display panel according to Claim 46, wherein said unit display period is one field or one frame display period of said input video signal.

49. A method for driving a plasma display panel wherein

discharge cells are formed corresponding to pixels at respective intersections between a plurality of row electrodes disposed in an array for respective scan lines and a plurality of column electrodes disposed in an array crossing said row electrodes, having a light-emission drive sequence comprising the steps of:

executing pixel data writing step for setting, in each of N divided display periods constituing a unit display period, said discharge cells to either one of non-light-emitting cells or light-emitting cells in response to N-bit display drive pixel data obtained by applying the multi-level gray-scale processing to input video signal in each of said divided display periods, and

executing a light-emission sustaining step for allowing only said light-emitting cells to emit light by the number of times corresponding to weights assigned to said divided display periods respectively,

wherein said light-emission drive sequence comprises first and second light-emission drive sequences which have ratios of the number of times of light-emission different from each other in said light-emission sustaining period of each of said N divided display periods, and

the brightness level of respective gray-scale brightness points that are obtained by carrying out said first light-emission drive sequence differs from the brightness level of respective gray-scale brightness points obtained by said multi-level gray-scale processing when said second light-

emission drive sequence is carried out.

50. The method for driving a plasma display panel according to Claim 49, wherein said input video signal is a video signal from a personal computer.

51. The method for driving a plasma display panel according to Claim 49, wherein said unit display period is one field or one frame display period of said input video signal.